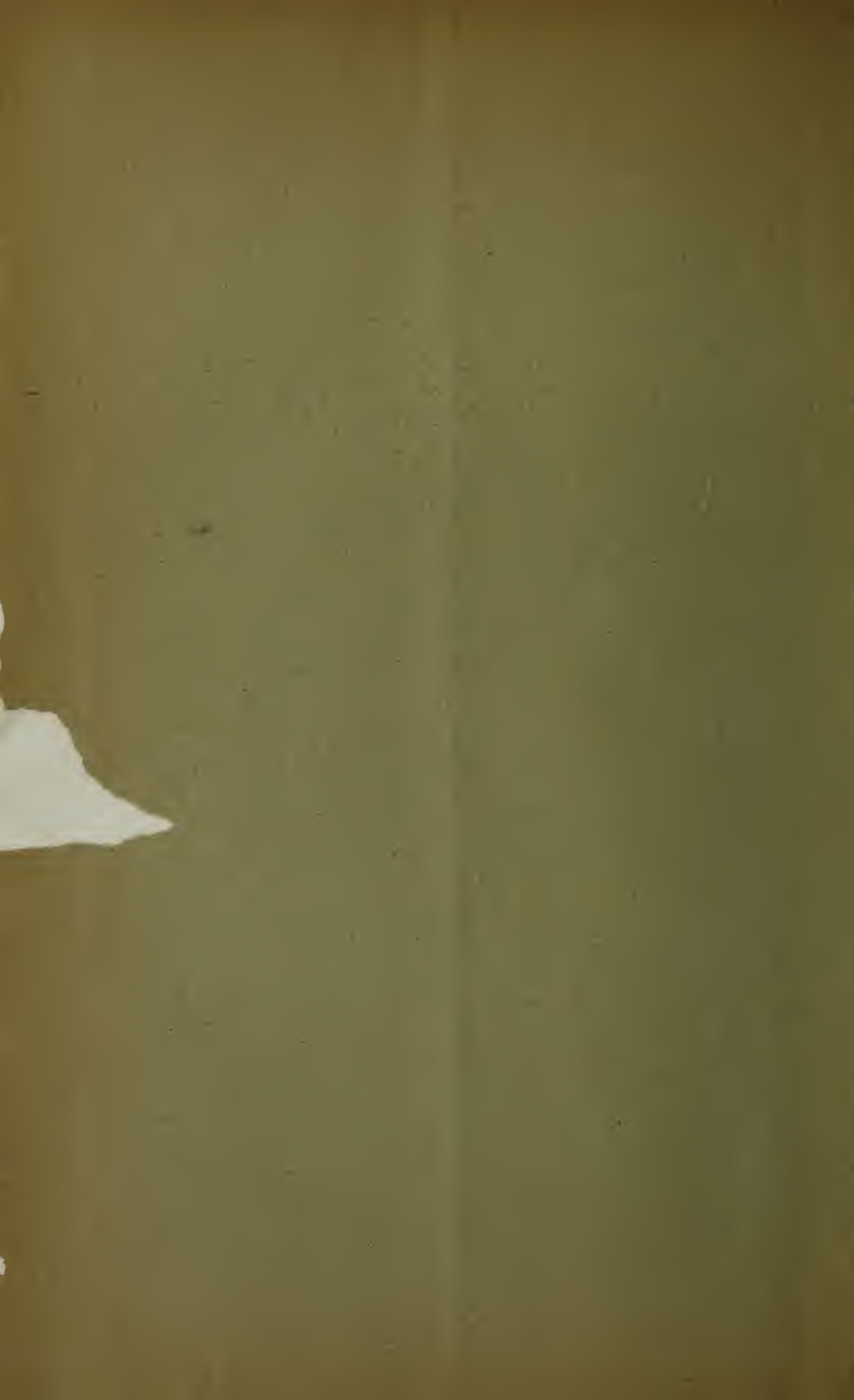

COUNTY OF CUMBERLAND.

LOCAL GOVERNMENT ACT, 1888.

Summaries of the Annual Reports of the Medical Officers of Health of the Urban, Rural, and Port Sanitary Districts of Cumberland, for the year 1897, several tables of Vital Statistics, and Report thereon, prepared by Henry Barnes, M.D.; LL.D., F.R.S.E., at the request of the General Purposes Committee.



17th Feb. 1898

Dear Sir,

I shall be happy
to send you a copy
of my Annual Report
as M.O. H. Wiston Urban
District, if a Ms. copy
would be of any ser-
vice to you. The District
Council does not go to
the expense of printing
unnecessarily.

Yours truly

Theobald A. Palm

The Librarian

Brit. Med. Association

COUNTY OF CUMBERLAND.

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REPORT OF DR. BARNES.

To the General Purposes Committee of the Cumberland
County Council.

MR. CHAIRMAN AND GENTLEMEN,—

In accordance with your instructions I have prepared summaries of the Annual Reports of the Medical Officers of Health of the Sanitary Districts of Cumberland for 1897. I have followed the same plan as last year. Many of the summaries are longer than usual, but in view of the resolution of your Committee passed last year and which is still, I presume, in force, I have not thought it desirable to curtail them. I have, as in former years, compiled several tables illustrating the vital statistics of the County. There is one new table which appears this year for the first time showing the death rate from Consumption in the different Sanitary Districts during the last five years.

The number of the Sanitary Districts is the same as last year, and there does not appear to have been any change made in the area of any of them. A larger number of the reports are printed this year. It is very desirable that all the reports should be printed and circulated, as this course would enable the public to become acquainted with the sanitary progress of the district, and it would be an encouragement to the Medical Officer also, if his report was put into a permanent form, thereby making it more useful for further reference. The Holme Cultram, Maryport, Wigton (Urban), Alston I., Alston II., Brampton, and Workington (Port) Districts send in written or type-written reports. There is no report this year from Harrington, the late Medical Officer having died near the close of the year. Through the courtesy of your Clerk I have been able to obtain from the newly-appointed Medical Officer, Dr. Cullin, the statistical data which were necessary to complete the tables. The report from Keswick only deals with eight months of the year, the death of Dr. Ring last spring having caused a vacancy in the office of Medical Officer of Health. His successor in presenting his report only deals with the statistics coming under his own observation.

For the purposes of sanitary administration the County is divided into 26 districts. There are 15 Urban, 10 Rural, and 1 Port. The estimated population of the 15 Urban Districts at the middle of the year was 163,755, being an increase of 2,076 over the previous year, the principal increase being at Arlecdon and Frizington, Carlisle, Millom, Whitehaven, and Workington.

The estimated population of the 10 Rural Districts at the middle of the year was 110,848, being an increase of 386 over the previous year. Alston No. II. District shows an increase of 200, which is attributed to the increased prosperity of the mining industry, and Cockermouth (Rural) has an increase of 115.

The total estimated increase of population of the County for the year is 2,462, and if this be added to the total increase noted in last year's report it will be seen that the estimated increase of the population of the County since 1891 is 5,012.

In comparing the vital statistics of the year 1897 with the year preceding it will be seen that there is a small decrease in the Urban death rate of the County, and it is now lower than in any previous year. In 1895 it was 18.07, in 1896 it stood at 15.73, and it now stands at 14.05. Carlisle has again the highest death rate of any Urban District in the County, and Egremont the lowest. In the former it was 19.40, and in the latter 9.84. The highest birth rates for the year were as follows:—Millom, 35.93; Workington, 33.90; Harrington, 32.16; and Carlisle, 31.70. The lowest Urban birth rate for the year was at Cockermouth, viz., 24.20. There were 7,601 births registered during the year, being 7 more than in the preceding year. The births in Urban Districts numbered 4,925, and in Rural Districts 2,676. The number of deaths in Rural Districts was 1,728, and 2,511 in Urban Districts. The excess of births over deaths in the year was 3,362, being nearly the same as in the year preceding, viz., 3,387.

The average birth rate in Rural Districts shows a slight increase over the previous year, being 23.64 as against 22.47 in 1896, but it falls far short of the Urban birth rate. The highest birth rates were Whitehaven 27.35, Carlisle 26.20, and Penrith 26.06, and the lowest at Alston No. I. District, viz., 16.30.

The average death rate in Rural Districts is also higher, being 15.45 as against 14.86 in 1896. Alston No. I. District again heads the list with the highest death rate, having had this position for the last three years. In 1895 its death rate was 25.10, in 1896 it fell to 18.13, and last year it rose to 19.30. Cockermouth Rural District has the lowest death rate among the Rural Districts, viz., 12.16. The average infantile mortality in Urban Districts shows a considerable drop, being only 114.60 as against 153.47, but there is a slight increase in Rural Districts, being 113.72 as against 83.60 in 1896. The highest infantile mortality in Urban Districts occurred at Harrington, and amounted to a rate of 177 per 1,000 births. As there is no report from this district no cause can be assigned. In Rural Districts Alston No. II. District shows a rate of 227.20, and is attributed mainly to improper feeding and inherited disease.

The average zymotic rate in Urban Districts is slightly lower, being 1.26 as against 1.87 in 1896. This compares very favourably with the zymotic rates in England and Wales. The highest zymotic rates were in Alston No. I. and No. II. Districts, being 2.34 and 2.13 respectively. In Brampton the zymotic rate was nil.

In order to compare the Urban and Rural Districts of the county, as regards their vital statistics, with other parts of the country, I have compiled the following table. Owing to the early period of the year, I am unable to give the statistics of any neighbouring county, but the average rates of Cumberland bear a favourable comparison with the rest of the country. The table is as follows :—

				Birth rate per 1000 of the population.	Death rate per 1000 of the population.	Zymotic rate per 1,000 of the population.	Infantile Mortality: rate of deaths under one year to 1,000 births.
London	...	...	...	30.00	18.20	2.58	159
Thirty-two Provincial Towns .				31.20	19.70	3.06	189
Thirty three large Towns, including London			...	30.70	19.10	2.87	177
England and Wales ...			...		17.40	2.15	
England and Wales, less the 100 chief Towns...			...		16.40	1.62	
County of Cumberland	{	Urban	...	28.93	14.05	1.26	114.60
		Rural	..	23.64	15.45	0.92	113.72

In view of the prominent attention which has recently been directed to the prevention of tuberculosis, I have constructed a table showing the death rate from phthisis in each Sanitary District of the County for the last five years. The highest death rate from phthisis in 1897 was at Aspatria, viz., 2.77. The disease seems to be on the increase in this district. In 1893 it was *nil*, in 1894 it amounted to 1.07, and

in 1896 it had risen to 3.00. The lowest death rates from phthisis in Urban Districts during the year were at Harrington, viz., 0.28; Keswick, 0.41; Penrith, 0.90; and Egremont, 0.79. It should be stated, however, that the Keswick report only deals with eight months of the year. The highest death rate from phthisis in Rural Districts was at Alston No. II. District, viz., 1.60, and the lowest at Bootle, viz., 0.33. Eminent authorities are of opinion that there has been a steady diminution in the mortality from pulmonary tuberculosis during the last 30 years in direct proportion to the improvement in general Hygiene, but there has been no such diminution in other forms of tubercular disease. Judging from the average rates in Urban and Rural Districts in this County the mortality in Cumberland appears to be about the same each year. In my report for 1893, when I first called attention to this subject, I expressed the hope that more attention would be given to the prevalence of the disease, and I especially pointed to the necessity of dealing with the sputa of tubercular subjects either by burning or chemical disinfection, and also the desirability of drawing up such regulations as are in force in health resorts for consumptive patients. It would be of interest to separate the death rate from phthisis, and that from other forms of tubercular disease, but as I found that I could not do it in all the districts owing to the absence of the necessary data I have refrained from the attempt to make a further table. About two and a half years ago I called public attention to the risks of eating tuberculous meat, and drinking the milk of tuberculous cows, and also to the value of tuberculin as a test for the detection of tuberculosis in cattle, quoting the results which had been laid before the first Tuberculosis Commission. In September last my attention was specially drawn to the measures for the prevention of phthisis or consumption in America, and especially in New York. The Health Department of New York City, recognising that the most important source of infection is through the sputum of consumptives, take every care to make this danger fully known, and issue regulations to obviate it. Great care is also taken to prevent infection by the meat or milk of tubercular animals. Special regulations have been established for the sale of milk, and all milch cows are subjected to the tuberculin test, and if found diseased are killed. All cases of consumption are notified to the Sanitary Authority, and it is reported that the most beneficial results have already resulted from the various measures instituted for the prevention of this terrible disease. I desire to call special attention to the regulations set forth in the Annual Report of the Medical Officer for the City of Carlisle. These regulations have since been adopted, and it will be interesting to see if the same good results do not follow as have been noticed in New York, as well as in other American cities. There can be no doubt that tuberculosis among cattle is common in Cumberland. When enquiring into the subject some time ago I was informed that at least 25

per cent. of all milch cows in this district were affected by it, and in last year's report of the Medical Officer of the neighbouring county of Northumberland the same proportion of tuberculosis is said to exist among the dairy cows in that county. Dr. Niven, of Manchester, inquiring into the milk supply of that city, found that from 15 to 50 per cent. of the cows in the different parts of Lancashire reached the tuberculin test; Dr. Hope, of Liverpool, detected the bacillus of tubercle in 2.8 per cent. of samples of Liverpool milk, but in 24 per cent. of those taken at a certain railway station, the condition of cowsheds in Rural Districts being much worse than in near towns. The Dairies, Cowsheds, and Milk Shops Order applies to all Sanitary Authorities, and under it regulations may be made in regard to ventilation, cleansing, drainage, and water supply of dairies and cowsheds; for securing cleanliness of milk stores, and for taking precautions against infection of the milk supply. I have no means of ascertaining how many of the District Councils have adopted regulations under this order, but the dangerous results of failing to carry out the regulations may be seen in almost every district, and the responsibility of failing to make such regulations should be clearly put before the District Councils. Sanitary Authorities are incurring a grave responsibility in neglecting to adopt and enforce regulations under this order, and a return should be obtained of the regulations in force in the county.

The question of the increase of cancer is referred to in some of the reports, and in some districts this disease is even more fatal than consumption. In the Brompton Rural District there were 12 deaths from cancer and 9 from consumption, and the Medical Officers of the Cockermouth Rural and Wigton Rural Districts report that cancer is on the increase. A comparison of the mortality from these two diseases during the last three years is given in the report of the Medical Officer of the Penrith Rural District. I should be glad to construct a table similar to the one relating to tuberculosis showing the mortality from cancer in each Sanitary District in the County if the data were furnished to me in the reports. Recent investigations tend to show that there are cancer regions existing close to regions enjoying an immunity, and that the latter are generally in dry, well drained localities and some distance from streams. In cancer regions one of two conditions prevail—either they are closely populated, or, if the houses are spread about, they are near sluggish streams or stagnant water, or on ill drained soil. Further investigations are needed.

The *Infectious Diseases (Notification) Act* is now in force in all the districts except two, viz., Aspatria and Wigton, both Urban Districts. In one, viz., Bootle, it was adopted last year, but at too late a period to permit of any returns being prepared. Evidence, however, was soon furnished of its value and will be found set forth in the report of the Medical Officer.

Scarlet Fever was again the most prevalent infectious disease. It occurred in 23 Sanitary Districts and 1,186 cases were notified, being a decrease of 859 than notified in 1896. The disease was for the most part mild in type. Carlisle and Whitehaven Urban Districts furnished the largest number of cases, but in both districts the epidemic appears to be dying out, and a more favourable return may be expected next year. The steam disinfectors are reported to have been very useful in some of the districts.

Enteric fever is reported in 18 districts. There were 80 cases, 19 occurring in Carlisle and 11 in Workington. In the previous year there were 103 cases notified.

Diphtheria and membranous croup occurred in 17 Sanitary Districts. Carlisle supplied 44 cases, Millom 11, Wigton Rural District 17, and Longtown 13. There were 129 cases notified as against 125 cases in 1896.

Measles is only reported in 8 of the Sanitary Districts. In the previous year it occurred in 11 districts. It is only notified in the Carlisle Rural District, and 175 cases were reported as against 56 in the preceding year.

Whooping Cough is reported in 15 Sanitary Districts. It causes a heavy infantile mortality in some districts.

Diarrhœa prevailed in 12 districts. It does not appear to have occurred in an epidemic form.

Erysipelas is reported in 20 Sanitary Districts, and 250 cases were notified, the largest number being in Carlisle.

Puerperal Fever occurred in 7 districts; 22 cases were notified, and of these 9 were in Carlisle.

Smallpox occurred in only one district, viz., Whitehaven Urban District. There were 3 cases, and the source was not traced.

Typhus fever is not reported in any district during the year.

Influenza occurred in several districts, and affected the death rate in several instances.

The resolutions passed by your Committee last year, specially requesting me to call attention to such points in the reports as appear to call for the interference of the Local Government Board, seems to have had very satisfactory results in many instances. As I stated last year the Local Government Act of 1888 imposes upon the County Council the obligation of making representations to the Local Government Board, if the Council are satisfied from a perusal of the reports sent in by the Medical Officers of Health, that the Public Health Act of 1875 has not been properly put in force in the district to which the report relates, or that any other matter affecting the public health of the district requires to be remedied. I brought forward a series of points which had attracted my attention in the perusal of the reports, and suggested that further enquiries should be

made, and if satisfactory explanations were not forthcoming, then representations might be made to the Supreme Authority in accordance with the terms of the Act. I propose to review the points mentioned last year, and show from the reports what has been done in each case, and call further attention to such further matters as are indicated.

Arlecdon and Frizington.—1. In the Arlecdon and Frizington report for 1896, attention was called to a direct contravention of the bye-laws—certain water closets having recently been built without being provided with window or efficient ventilation. There is no mention in the report for 1897 as to whether any action was taken in the matter, and there is nothing further in the report specially calling for notice.

Aspatria Urban District.—2. In the Aspatria Urban District the need for an infectious hospital was last year indicated. No steps seem to have been taken. The notification of infectious diseases is not compulsory.

Carlisle Urban District.—3. There is again nothing in the report of the Carlisle Urban District calling for special remark.

Cleator Moor Urban District.—4. Several houses in the Cleator Moor Urban District were condemned as unfit for habitation. In the report for 1897 it appears that notices were served on the owners of several dwelling-houses, in accordance with a resolution passed at a special meeting of the Council on June 28, and the County Council were informed of the proposed action. In October the houses were visited. There are still eight houses unfit for habitation, and the Medical Officer of health recommends their closure, in accordance with section 32 of "The Housing of the Working Classes Act," unless certain alterations are carried out. An enquiry should be directed to ascertain whether any further action has been taken.

Cockermouth Urban District.—5. Attention was called to the absence of any provision for the isolation of infectious cases in the Cockermouth Urban District in my last year's report. I am glad to see that the Urban Council have passed a resolution that an Isolation Hospital should be provided, and a committee has been appointed to carry out the resolution. Several insanitary dwellings appear to require attention, and some defects in the sewerage call for remedy.

Egremont Urban District.—6. Special attention was called last year in the report of the Egremont Urban District to a considerable number of houses being defective in a hygienic standpoint. A very great improvement is reported by the removal of ashpits and privies from defectively ventilated courts. A nuisance dangerous to health exists at Moor Row; complaints are frequent, and enquiries should be made as to what action has been taken.

Harrington.—7. There is no report from Harrington this year.

Holme Cultram Urban District.—8. In the **Holme Cultram Urban District**, the nuisances at the Straits—which have several times been reported on—have been abated, and other nuisances mentioned have also been abated.

Keswick.—9. In the **Keswick** report there is again nothing calling for enquiry.

Maryport Urban District.—10. In the **Maryport Urban District** attention is again called to the contamination of the water supply. Several insanitary houses seem to require attention, and have been reported on.

Millom Urban District.—11. There is nothing to call for further enquiry in the **Millom Urban District**.

Penrith.—12. The question of the water supply at **Penrith**, which in previous reports was stated to be liable to sewage contamination, is occupying the attention of the Council, and the engineer is engaged upon plans for improving the supply.

Whitehaven (Urban).—13. The alterations in the hospital, recommended in two previous reports, and specially called to notice in my last report, have been carried out according to plans approved by the Local Government Board. Some slaughter-houses are condemned as they do not admit of being efficiently inspected.

Wigton Urban District.—14. The Medical Officer of the **Wigton Urban District** again calls attention to the absence of any provision for isolating infectious diseases, and to the necessity for adopting the Notification of Infectious Diseases Act. Some improvement is reported in the water supply.

Workington Urban District.—15. In the **Workington Urban District** attention is again called to the dangers which may spring from the present intermittent system of water supply. An attempt has been made to deal with the housing of the working classes. A large block of insanitary property has been scheduled, but nothing has been done.

Alston No. I. District.—16. Some improvement appears to have resulted in **Alston No. I. District** in consequence of last year's report, but much remains to be done. The supply of water at the North end of the Town foot is defective. There were 49 notices served to provide closets and ashpits, and only 10 complied with. Filthy accumulations at Clitheroe, Burn Bank, and Nentside exist.

Alston No. II District.—17. An abatement of nuisances and an improvement in defective sanitary conditions are reported in **Alston No. II. District**. The water supply requires attention; after rain the water in most of the wells is unfit to drink. More privy accommodation is urgently needed.

Bootle Sanitary District.—18. In the **Bootle Sanitary District** the insanitary conditions referred to in the last two years' reports as existing at Silecroft are now removed. The Infectious Diseases Notification Act has been adopted. A better water supply is required in some portions of the district.

Brampton District.—19. A definite scheme of water supply by gravitation has been decided upon in the **Brampton District**.

Carlisle Rural District.—20. There is nothing in the **Carlisle Rural District** report which appears to call for further enquiry.

Cockermouth Rural District.—21. In the **Cockermouth Rural District** nothing seems to have been done to provide for the isolation of infectious cases. Special attention was called to the need for it in last year's report. Several nuisances dangerous to health are again reported at Dearham. Temporary inconvenience from inadequate water supply was experienced at Brigham, and there is danger to Maryport water from Keswick sewage works.

Longtown District.—22. Some of the defects in the water supply, alluded to in last year's report for the **Longtown District**, have been remedied. Several sanitary defects have been reported and nothing done; these obviously require attention.

Penrith Rural District.—23. The list of nuisances referred to in the report of the **Penrith Rural District** for 1896 appears to have been abated to a great extent. There is nothing further calling for enquiry.

Whitehaven Rural District.—24. In the **Whitehaven Rural District** attention is called to the investigation which took place in consequence of the representations made by the Parish Council of St. John, Beckermeth, that the parish was insufficiently supplied with water.

Wigton Rural District.—25. In the report in the **Wigton Rural District** it is stated that representatives of Aspatria Urban, Holme Cultram Urban, Wigton Urban, and Wigton Rural District Councils met in conference, with respect to joint action in providing an Infectious Hospital and disinfecting chamber, and decided to take no action. No reasons are stated.

Workington Port Sanitary District.—26. In the report last year it was stated that the hospital for the **Workington Port Sanitary District** was not in a fit state for the reception of patients. It is now stated that the hospital has been thoroughly renovated, and is quite fit for the immediate reception of patients.

Many important sanitary improvements have been carried out during the year, and full references to the most important of them will be found in the summaries. There are also many great schemes of sanitary improvement under consideration. I do not think it necessary to enter into details in this report.

I have the honour to be,
Mr. Chairman and Gentlemen,
Your obedient servant,

HENRY BARNES, M.D.

CARLISLE, *March 30th, 1898.*

TABLE I.

Vital Statistics relating to Cumberland in 1896.

District.	Estimated Population	Birth Rate.	Death Rate.	Zymotic Rate.	Death Rate from Phthisis.	Infantile Mortality.
<i>Urban.</i>						
Arlecdon and Frizington	5,900	29'00	14'91	2'88	1'69	140'00
Aspatria -	2,888	29'08	14'80	0'30	2'77	142'00
Carlisle -	41,700	31'70	19'40	1'30	2'18	134'00
Cleator Moor	9,464	28'40	12'78	1'58	1'50	111'50
Cockermouth	5,411	24'20	11'82	0'55	1'66	114'50
Egremont -	6,300	26'66	9'84	0'95	0'79	83'30
Harrington -	3,517	32'16	14'50	3'12	0'28	177'00
Holme Cultram -	4,560	26'30	12'70	nil	1'53	58'30
Keswick - -	4,830	28'36	12'83	0'20	0'41	71'40
Maryport -	12,520	29'55	13'01	2'79	1'11	113'50
Millom - -	9,910	35'93	14'12	1'41	1'81	126'40
Penrith - -	9,300	25'59	15'37	2'25	0'90	131'00
Whitehaven	20,000	27'95	15'70	1'20	1'15	121'60
Wigton - -	3,965	25'22	14'60	nil	1'26	70'00
Workington	23,490	33'90	14'46	0'51	1'20	124'60
Average Rate of Urban Districts - - }		28'93	14'05	1'26	1'34	114'60
<i>Rural.</i>						
Alston I - -	1,709	16'30	19'30	2'34	0'58	107'00
Alston II -	1,875	23'46	16'50	2'13	1'60	227'20
Bootle - -	5,976	23'09	15'70	0'50	0'33	101'40
Brampton -	9,754	23'16	13'43	nil	0'92	88'50
Carlisle - -	16,009	26'20	18'10	0'80	1'81	107'10
Cockermouth	26,395	26'06	12'16	1'09	0'53	107'50
Longtown -	7,181	22'42	14'34	0'55	1'11	99'38
Penrith - -	13,313	25'23	16'90	0'67	1'30	77'38
Whitehaven	15,500	27'35	14'32	0'83	0'58	110'84
Wigton - -	13,136	23'20	13'80	0'30	1'14	111'00
Average Rate of 10 Rural Districts - - - }		23'64	15'45	0'92	0'99	113'72

TABLE II.

Table of Birth Rates in Cumberland for last five years.

District.	BIRTH RATE.				
	1893.	1894.	1895.	1896.	1897.
<i>Urban.</i>					
Arlecdon & Frizington	39.61	36.63	33.91	28.00	29.00
Aspatria - -	26.89	40.00	37.00	31.60	29.08
Carlisle - -	34.50	32.40	32.10	30.10	31.70
Cleator Moor - -	32.30	29.30	29.70	26.90	28.40
Cockermouth - -	29.70	27.30	27.10	24.20	24.20
Egremont - -	32.53	33.01	32.06	32.38	26.66
Harrington - -	28.42	35.53	31.52	32.94	32.16
Holme Cultram - -	20.10	26.30	25.80	27.80	26.30
Keswick - -	31.11	27.88	30.73	21.87	28.36
Maryport - -	33.90	30.80	30.20	29.23	29.55
Millom - -	36.40	36.84	33.20	31.31	35.93
Penrith - -	30.63	27.16	29.11	26.12	25.59
Whitehaven - -	29.00	28.47	33.73	32.78	27.95
Wigton - -	29.76	32.01	23.70	32.78	25.22
Workington - -	35.50	32.20	31.20	33.70	33.90
<i>Rural.</i>					
Alston, I. - -	21.00	19.30	21.60	16.90	16.30
Alston, II. - -	26.86	19.00	24.40	19.70	23.46
Bootle - -	20.80	22.50	21.90	21.10	23.09
Brampton - -	23.68	24.70	24.70	26.04	23.16
Carlisle - -	26.00	24.00	25.20	25.90	26.20
Cockermouth - -	30.80	28.60	28.70	27.57	26.06
Longtown - -	24.92	23.25	28.96	25.48	22.42
Penrith - -	27.00	23.95	24.28	24.99	25.23
Whitehaven - -	29.33	30.86	27.20	25.61	27.35
Wigton - -	25.10	26.70	25.60	24.40	23.20

TABLE III.

Table of Death Rates in Cumberland for the last five years.

District.	DEATH RATE.				
	1893.	1894.	1895.	1896.	1897.
<i>Urban.</i>					
Arlecdon & Frizington	17.50	12.03	15.65	12.52	14.91
Aspatria - - -	19.30	13.30	15.60	16.00	14.80
Carlisle - - -	21.60	19.20	19.40	18.20	19.40
Cleator Moor - -	13.50	14.80	17.30	15.20	12.78
Cockermouth - -	18.50	16.90	13.70	15.30	11.82
Egremont - - -	16.19	10.79	15.39	15.87	9.84
Harrington - - -	14.48	11.93	22.72	17.61	14.50
Holme Cultram -	9.20	14.68	16.00	12.50	12.70
Keswick - - -	18.14	15.87	16.96	13.00	12.83
Maryport - - -	18.60	15.80	17.60	14.69	13.01
Millom - - -	18.00	12.33	15.82	16.42	14.12
Penrith - - -	19.22	15.33	19.26	17.95	15.37
Whitehaven - -	18.77	12.94	26.84	19.36	15.70
Wigton - - -	17.65	16.89	19.42	15.64	14.60
Workington - -	16.00	14.95	19.50	15.80	14.46
<i>Rural.</i>					
Alston, I. - - -	13.40	12.20	25.10	18.13	19.30
Alston, II. - - -	17.91	18.50	17.90	10.10	16.50
Bootle - - -	18.22	13.30	13.30	12.20	15.70
Brampton - - -	17.32	14.86	13.84	13.12	13.43
Carlisle - - -	19.40	20.50	17.30	15.10	18.10
Cockermouth - -	13.20	12.50	12.90	12.50	12.16
Longtown - - -	15.87	15.87	18.93	13.36	14.34
Penrith - - -	13.40	13.84	15.76	12.09	16.90
Whitehaven - -	16.09	15.66	17.60	16.64	14.32
Wigton - - -	13.70	12.20	17.80	12.50	13.80

TABLE IV.

Table of Zymotic Rates in Cumberland for last five years.

District.	ZYMOTIC RATE.				
	1893.	1894.	1895.	1896.	1897.
<i>Urban.</i>					
Arladon & Frizington	1.15	1.94	2.73	0.86	2.88
Aspatria - -	1.03	0.30	<i>nil.</i>	1.60	0.30
Carlisle - -	3.60	1.10	0.80	0.70	1.30
Cleator Moor - -	2.20	1.70	4.20	2.10	1.58
Cockermouth - -	2.05	1.86	0.93	1.11	0.55
Egremont - -	0.79	0.95	1.58	1.26	0.95
Harrington - -	0.85	0.28	6.53	3.40	3.12
Holme Cultram - -	0.20	0.42	0.60	1.09	<i>nil.</i>
Keswick - -	1.96	4.32	1.27	2.91	0.20
Maryport - -	2.60	1.50	3.11	2.55	2.79
Millom - -	3.80	0.83	1.23	3.26	1.41
Penrith - -	2.07	1.19	0.32	1.29	2.25
Whitehaven - -	2.05	0.42	6.52	2.21	1.20
Wigton - -	1.00	<i>nil.</i>	3.78	2.27	<i>nil.</i>
Workington - -	1.30	0.91	2.40	1.50	0.51
<i>Rural.</i>					
Alston I. - -	1.17	0.58	2.30	<i>nil.</i>	2.34
Alston II. - -	1.59	1.19	2.97	0.59	2.13
Bootle - -	1.60	1.60	0.30	0.50	0.50
Brampton - -	3.28	0.20	0.40	0.20	<i>nil.</i>
Carlisle - -	0.90	0.90	0.50	1.40	0.80
Cockermouth - -	1.14	1.40	1.31	1.68	1.09
Longtown - -	1.25	1.39	0.13	0.41	0.55
Penrith - -	0.22	0.21	0.67	0.81	0.67
Whitehaven - -	0.99	1.33	3.00	1.61	0.83
Wigton - -	0.39	0.68	0.60	0.50	0.30

TABLE V.

Table of Death Rates from Phthisis in Cumberland for last five years.

District.	Death Rate from Phthisis.				
	1893	1894	1895	1896	1897
<i>Urban.</i>					
Arlecdon & Frizington	1.53	1.06	2.00	1.04	1.69
Aspatria - - -	<i>nil</i>	1.07	1.66	3.00	2.77
Carlisle - - -	1.19	1.43	1.83	1.76	2.18
Cleator Moor - -	1.30	2.80	2.00	1.58	1.50
Cockermouth - -	2.05	0.37	1.11	1.85	1.66
Egremont - - -	0.95	0.95	1.74	0.95	0.79
Harrington - - -	0.85	1.10	1.93	0.85	0.28
Holme Cultram - -	0.87	1.48	0.65	0.65	1.53
Keswick - - -	0.73	0.95	1.27	1.04	0.41*
Maryport - - -	1.26	1.49	0.70	1.03	1.11
Millom - - -	1.60	1.14	1.43	0.51	1.81
Penrith - - -	1.80	1.29	1.08	1.26	0.90
Whitehaven - - -	1.50	0.94	1.63	1.15	1.15
Wigton - - -	2.00	1.51	1.26	1.79	1.26
Workington - - -	0.95	1.08	0.70	0.82	1.20
Average Rates of Urban } Districts - - - }	1.24	1.24	1.39	1.28	1.34
<i>Rural.</i>					
Alston I - - -	1.17	2.90	2.30	2.30	0.58
Alston II - - -	1.78	2.30	1.70	0.59	1.60
Bootle - - -	0.50	0.83	0.66	1.00	0.33
Brampton - - -	0.92	1.43	1.64	1.33	0.92
Carlisle - - -	1.93	2.43	1.31	1.90	1.81
Cockermouth - -	0.75	0.75	0.46	0.57	0.53
Longtown - - -	1.25	1.53	1.25	0.97	1.11
Penrith - - -	0.60	1.02	0.59	1.04	1.30
Whitehaven - - -	1.52	1.40	1.13	0.77	0.58
Wigton - - -	0.99	1.14	1.29	0.98	1.14
Average Rates of Rural } Districts - - - }	1.14	1.57	1.23	1.14	0.99

* The Keswick report only refers to eight months of the year.

TABLE VI.

Showing number of New Cases of Infectious Diseases notified in accordance with the Infectious Diseases Notification Act, 1889.

District.	Scarlet Fever.	Enteric Fever.	Diphtheria & Membranous Group.	Erysipelas.	Puerperal Fever.	Smallpox.
<i>Urban.</i>						
Arlecdon and Frizington	56	...	...	4	...	...
Aspatria	Notification not compulsory					
Carlisle	258	19	44	101	9	...
Cleator Moor	10	3	1	11	...	...
Cockermouth	41	1	1	4	...	...
Egremont	32	...	3	8	...	...
Harrington	7	3	3	1	...	...
Holme Cultram	...	1	...	5	...	...
Keswick	65	...	1	...	...	...
Maryport	14	6	5	4	4	...
Millom	87	2	11	9	...	...
Penrith	21	...	...	3	...	...
Whitehaven	144	7	5	16	2	3
Wigton	Notification not compulsory					
Workington	44	11	7	26	...	...
<i>Rural.</i>						
Alston I.	4	2	...	...	...	...
Alston II.	32	...	...	1	...	...
Bootle	Came into force Dec. 11, 1897					
Brampton	7	2	...	7	...	...
Carlisle	114	3	7	18	2	...
Cockermouth	59	2	7	7	...	...
Longtown	27	2	13	1	...	...
Penrith	46	8	1	6	2	...
Whitehaven	88	5	3	7	1	...
Wigton	30	3	17	11	2	...
Total	1186	80	129	250	22	3

TABLE VII.

Sanitary Districts in which the following Zymotic Diseases occurred during the year 1897.

Scarlet Fever.	Typhus Fever.	Enteric Fever.	Measles.	Diphtheria and Membranous Group.	Whooping Cough.	Diarrhœa.	Smallpox.	Puerperal Fever.	Erysipelas.
Arlecdon and Frizington Aspatria Carlisle U. Cleator Moor Egremont Harrington Kewick Maryport Millom W'haven U. Wigton U. W'haven U. Workington Alston I. Alston II. Bootle Brampton Carlisle R. C'mouth R. Longtown Penrith R. W'haven R. Wigton R.		Carlisle U. Cleator Moor Harrington Holme Cul'm Maryport Millom W'haven U. Wigton U. Workington Alston I. Brampton Carlisle R. C'mouth R. Longtown Penrith R. W'haven R.	Carlisle U. Maryport Penrith U. Workington Alston I. Alston II. Carlisle R. Penrith R.	Aspatria Carlisle U. Cleator Moor Egremont Harrington Kewick Maryport Millom W'haven U. Wigton U. Workington Carlisle R. C'mouth R. Longtown Penrith R. W'haven R. Wigton R.	Arlecdon and Frizington Carlisle U. Cleator Moor Egremont Harrington Maryport Millom W'haven U. Workington Alston I. Bootle Carlisle R. C'mouth R. W'haven R.	Cleator Moor Egremont Maryport Millom Penrith U. W'haven U. Workington Alston I. Bootle Carlisle R. C'mouth R. W'haven R.	W'haven U.	Carlisle U. Maryport W'haven U. Wigton U. Carlisle R. Penrith R. W'haven R.	Arlecdon and Frizington Carlisle U. Cleator Moor Egremont Harrington Holme Cul'm Maryport Millom Penrith U. W'haven U. Workington Alston II. Bootle Brampton C'mouth R. Longtown Penrith R. W'haven R. Wigton R.

SUMMARIES OF REPORTS
OF
MEDICAL OFFICERS OF HEALTH

OF THE
26 SANITARY DISTRICTS OF CUMBERLAND,

For 1897.

PREPARED BY

HENRY BARNES, M.D., LL.D., F.R.S.E.

ARLECDON AND FRIZINGTON (URBAN).

Medical Officer of Health - - - JAS. J. LACE.

Area in acres, 5,556.340.

Population, census, 1891, 5,697; estimated to middle of 1897, 5,900.

Birth rate, 29.0.

Death rate, 14.91.

Zymotic rate, 2.88. Infantile mortality, 140.

There were 171 births and 88 deaths. There has been a slight increase in death rate due principally to zymotic diseases, whooping cough having contributed 11 deaths, and scarlet fever 6 deaths. The population of the district shows an increase of 150 as compared with the previous year. There were 56 notifications of infectious diseases. Whooping cough was very prevalent in both Arlecdon and Frizington. Scarlet fever was extensively prevalent during greater part of year. Four cases of erysipelas were reported. Chicken pox and mumps were both prevalent. There were 10 deaths from phthisis.

In regard to water supply a more wholesome water for sanitary requirements could not well be obtained. Reference is made to two analyses of water, one from the spring some years ago, by the late Mr. W. H. Watson, of Braystones, and the other from the storage reservoir, taken September 29th, 1897, by Mr. E. Frankland. Both reports are satisfactory. The latter says "This sample belongs to the class of unpolluted mountain waters. It is entirely free from any evidence of excremental pollution.

The usual inspections have been made. The method of sewage removal and disposal appears to be satisfactory. The scheme of ground or sub soil drainage referred to two years ago is again recommended. Under the "Sale of Food and Drugs Act" 12 samples were purchased, viz., 4 of butter, 2 of bread, 1 of flour, 1 of sago, 1 of coffee, and 1 of pepper. All were found to be genuine. Several statistical tables are added.

Rainfall at Braystones, 43.63; evaporation, 30.44.

ASPATRIA (URBAN).

Medical Officer of Health - - - - W. P. BRIGGS

Area in acres, 3,550.

Population (last census), 2,900; estimated to middle of July, 2,888.

Birth rate, 29.08.

Death rate, 14.8

Infant death rate (under one year), 142 per 1,000 births registered.

Zymotic rate, 0.3.

Death rate from tubercular diseases, 2.05.

Population is 12 lower than at last census and 112 less than the estimate of last year. The Inspector, in going round for the rates, has made a fresh census of the inhabitants, and the vital statistics are based upon the new data obtained. During the year 84 births were registered, and the birth rate is lower than that of the Urban Districts of Cumberland for 1896. There were 43 deaths. There was one death from diphtheria and 8 deaths from tubercular diseases. There were 12 deaths in persons over 70 years of age. The infant mortality is higher than it ought to be, and is mainly due to improper feeding or inherited disease, and not to insanitary conditions. The danger of giving young infants starchy food is clearly stated, and the importance of vigorous cleanliness in preparing the milk for bottle fed children is indicated. There were 4 cases of scarlet fever; the infection was brought to the children by their father from a neighbouring village. The cases were isolated so far as possible and disfectants supplied.

Very little sanitary work has been done. Drainage improvements were effected at the Cumberland Union Bank. At the Post Office, where the fatal case of diphtheria occurred, the privy midden has been abolished and the pail system substituted. Many insanitary ashpits have been removed and pail closets provided. Drainage improvements have been carried out at the cottages in the Brayton Road, to property in Newtown, as also to that of Mr. Davidson and Mr. Scott Clark. The lodging house has been fairly well kept. The scavenging is satisfactory. The slaughter houses are all private and are well kept. Factories and workshops are satisfactory. Dairies and cow-sheds are regularly limewashed, and milk supplied has not been found to be a cause of disease.

CARLISLE (URBAN).

Medical Officer of Health - - - - - WM. BROWN.

Area in acres, 2,029.

Population, census 1891, 39,200; estimated to middle of 1897, 41,700; density of population per acre, 20.5; inhabited houses (census 1891), 7,624; rateable value of district, £179,783.

Birth rate, 31.7.

Death rate, 19.4.

Zymotic rate, 1.3.

Infantile mortality, 134.

Death rate from tubercular diseases, 2.4; and from pulmonary diseases, 2.9.

There were 1,324 births, and 811 deaths. Of the latter, 42 did not belong to the Urban District. The greatest number of deaths were in the first week of February. The deaths from zymotic diseases were as follows:—Measles 1, scarlet fever 7, diphtheria 10, whooping cough 24, enteric fever 3, and diarrhœa and dysentery 9; total, 54. There were 258 cases of scarlet fever notified. The disease was most prevalent in October, November, and December. A chart is given, showing the number of deaths from scarlet fever in each year since 1874. During the last decade the number of deaths from this disease has never exceeded 21. In 1874 the number was 187. Nineteen cases of enteric fever were notified, and 6 cases were removed to hospital. There were 37 cases of diphtheria, in 33 houses, and the mortality was about 1 in 3 of the reported cases. In 3 of the houses minor sanitary defects were found. Influenza prevailed during early part of year, during summer, and at close of year. There were 431 cases of infectious diseases notified, viz., diphtheria 37, membranous croup 7, erysipelas 101, scarlet fever 258, enteric fever 19, puerperal fever 9. The Sanitary Authority isolated 98 cases at the fever hospital, viz., scarlet fever 85, enteric fever 5, diphtheria 7, and membranous croup 1.

Factories and workshops were satisfactory, except in two cases, where overcrowding occurred. The common lodging houses were on the whole satisfactory; one has been abolished. One block of insanitary property, in Jane Street, Willow Holme, was condemned as unfit for habitation; it is being repaired. Inspection of carcasses of 47 oxen, 4 sheep, 2 lambs, and 1 pig were made; 43 carcasses were

condemned ; 45 carcasses of beef were tuberculous. Special attention is called to the spread of tuberculosis, and to the danger of conveying the disease to man through the ingestion of milk. The tubercular conditions met with in the carcasses of bovine cattle at the Carlisle slaughter-house are described. The deaths from tubercular disease in Carlisle during the past three years have been considerably more than double the deaths from the principal zymotic disease, and the principal tubercular diseases constitute 10.2 per cent. of the total number of deaths during the last ten years. Rabbits and guinea pigs fed upon milk containing small pieces of crushed tubercle, rapidly become infected with tuberculosis. Human tuberculosis and bovine tuberculosis are one and the same disease, produced by the tubercle bacillus. Of 30 carcasses of cows slaughtered at the Carlisle slaughter-house, 1 in every 5 had marked tubercular disease of the udder, some of which were in the stage of suppuration, with foul smelling matter in their interior. In a few, tubercular matter was found in the milk ducts. It is believed that some of the cows had been milked until within a short period of their removal to the slaughter-house. It is recommended—

- (1) That all dairy cattle, from which milk is derived for distribution in the district, be subjected to regular veterinary inspection.
- (2) That a more rigid enforcement of bye-laws, as to cubic space of cow-sheds, be carried out.
- (3) That the Infectious Diseases Notification Act be extended to pulmonary phthisis, tubercular meningitis, and tuber mesenteria.

Several statistical tables are added.

CLEATOR MOOR (URBAN).

Medical Officer of Health - - - JOHN EATON.

Area in acres, 2,946.

Population, census, 1891, 9,464; estimated to middle of 1897, 9,464.

Birth rate, 28.4.

Death rate, 12.78.

Zymotic rate, 1.58.

Death rate from phthisis, 1.5, and from respiratory diseases, 2.5.

There were 269 births and 121 deaths. There were 15 deaths from zymotic diseases, being 7 from whooping cough, 7 diarrhœa, and 1 rheumatic fever. There were 13 deaths under one year. There were notified 11 cases of erysipelas, 10 of scarlet fever, 3 of enteric fever, 1 of membranous croup, and 4 of diarrhœa. Six of the scarlet fever cases were during the fourth quarter. No nuisances were observed at the houses where the 29 cases of zymotic sickness were reported, and no cases were sent to the Galemire Fever Hospital. The death rates are below the average.

Several separate inspections of sections of the district were made. A case of typhoid fever was reported from Bowthorn Road, but the medical attendant stated that it was not a case of typhoid fever or other zymotic disease. Notices were served on the owners of dwelling-houses 34 and 32 Wyndham Street, 20 North Street, 36 Wyndham Street, 27, 3 and 5 North Street, and 11 Back Ennerdale Road requiring them within two months to make the said premises fit for habitation. This was decided on at a special meeting of the Council held June 28th, and the County Council were informed of the proposed action. In October the houses were visited. There are still 8 houses unfit for habitation, and unless the w.c.'s are removed and suitable accommodation provided their closure is recommended under section 32 of the Housing of the Working Classes Act, 1890. During the year the Surveyor reports 60 water services were cleaned and put in. Defective water supplies are being dealt with. The nuisances have been less, and all have been remedied without prosecution.

COCKERMOUTH (URBAN).

Medical Officer of Health - - - - J. ROBERTSON.

Area in acres, 2,424.

Population, census 1891, 5,320; estimated to middle of 1897, 5,411.

Birth rate, 24.2.

Death rate, 11.82.

Zymotic rate, 0.55.

Infantile Mortality, 114.5.

Death rate from phthisis, 1.66, and from respiratory diseases, 1.66.

During the year there were 131 births and 64 deaths. The death rate is the lowest hitherto recorded. There were 15 deaths under one year of age, and 24 of persons over 65. Improper feeding was apparent in many of the infants who died. The provisions of the Infant Life Protection Act are described. There was one death from scarlet fever and two from diarrhœa. Notifications were received as follows:—Scarlet fever 41, membranous croup 1, typhoid fever 1, and erysipelas 4. Almost all the cases of scarlet fever were in the district below Cocker Bridge. The disease was mild in type. A prosecution was instituted of a girl for wilful exposure while desquamating, and a penalty of 15s. was inflicted. The Urban Council have passed a resolution that an Isolation Hospital should be provided, and a committee was appointed to carry out the resolution. A case of diphtheria was notified from Mackereth Row, but it is suspected that it may have been malignant scarlet fever. There was a case of membranous croup in Derwent Street. There was a case of enteric fever in Sullart Street. There was a bedroom and an attic for eight people, and the ventilation was bad. The overcrowding was subsequently abated. There were four cases of erysipelas. A case of anthrax in the cow occurred, having been removed from the Auction Mart. It was destroyed.

Several insanitary premises are described, and remedies suggested. Notices were served to abate the nuisance from black smoke. Notices were given to lime-wash cow-sheds, and all back courts and passages requiring it.

The sewerage is satisfactory, except in South and Sullart Streets, where the flushing is inefficient.

The water supply generally has been satisfactory.

There were 18 births and 25 deaths in the workhouse.

Several statistical tables and a tabular statement by the inspector of nuisances are appended.

EGREMONT (URBAN).

Medical Officer of Health - - - GEO. CALDERWOOD.

Area in acres, 2,755.25.

Population, census, 1891, 6,300; estimated to middle of 1897, 6,300.

Birth rate, 26.66.

Death rate, 9.841.

Zymotic rate, 0.952.

There were 204 births and 62 deaths. They are the lowest birth and death rates ever recorded. Scarlet fever and whooping cough were noted in Moor Row and Bigrigg in January. Scarlet fever reappeared in October at first in Egremont, and afterwards in other parts of the district. There were 21 cases at Egremont, 7 at Moor Row, and 4 at Bigrigg. The infantile mortality was very low, there being only 14 deaths under one year as against 41 in 1896. The mildness of the season accounts to some extent for the difference, and in addition there is the small zymotic rate. During the year there were reported 32 cases of scarlet fever, 3 of croup, and 8 of erysipelas. The death rate in Egremont was 9.28, in Moor Row and Scalegill 12.33, and in Bigrigg 7.81. In the latter place improved sanitation, caused by the substitution of water-closets for defective privies, has had no small share in lowering death rate.

During the year 94 water-closets have been substituted for privies. A very great improvement has been effected by removal of ashpits and privies from defectively ventilated courts in Egremont. The automatic tanks substituted are serving their purpose well, and the surroundings are wholesomer and purer. The sewers continue to act efficiently. Considerable complaint has been made as to the dirty condition of the water, and representations have been made to the Arlecdon District Council on the subject. Special attention is called to the condition of the backs of the houses at Scalegill Road, the west side of Penzance Street and part of Church Street at Moor Row. These are back to back houses and in this back street over 70 privies converge. Complaints are frequent, and there exists a nuisance dangerous to health. It is recommended that water-closets be substituted at once. Attention is also called to back street between Chapel Street and Springfield Road, Bigrigg. The privies open into this back street and constitute a nuisance dangerous to health. Their conversion is recommended. A house to house inspection was made and street improvement is reported, 50 printed notices, 30 verbal, and 3 written notices were served. Rainfall at Braystones, 43.63; evaporation, 30.44.

HARRINGTON (URBAN).

Owing to the lamented death of Dr. Dick, Medical Officer of Health for many years, there is no report from Harrington for last year. The death took place early in December, after a short illness. The present Medical Officer of Health, Dr. Cullin, has kindly forwarded me tables A and B, from which I have extracted the following particulars, and calculated the mortality rates for 1897.

Area in acres, 2,359·5.

Population, census 1891, 3,517; estimated to middle of 1897, 3,517.

Birth rate, 32·16.

Death rate, 14·50.

Zymotic rate, 3·12.

Infantile mortality, 177.

Death rate from Phthisis, 0·28.

HOLME CULTRAM (URBAN).

Medical Officer of Health - - - GEO. HILL.

Area in acres, 24,826.

Population in 1891, 4,559; estimated to middle of 1897, 4,560.

Birth rate, 26·3.

Death rate, 12·7.

Zymotic rate, nil.

There were 7 deaths from Phthisis.

During the year 6 cases of infectious disease were notified; of these, 5 were cases of erysipelas—4 being in Holme Low, and 1 in Holme East Waver. There was one case of typhoid fever at Silloth of a mild character.

In Holme Low, which includes Silloth, there were 30 deaths—equal to a death rate of 12·5. There were 3 deaths from Phthisis. Several nuisances were remedied without requiring notices to be served. The common lodging-houses are kept clean. There are three slaughter-houses—an increase of one—all kept in good order. The owner of Green Row was prosecuted, and authority obtained to put the place into a good sanitary condition; this has been done, and a difficulty has arisen with the tenants in getting them to take advantage of the conveniences provided. Notices have been served on each of the tenants to abate nuisances. Some cottages at Causeway-head were reported, and the owner has signified his intention to put them in good order. Some privies in property belonging to Mr. Mann, of Workington, have been put into good order. Notices have been served on Mr. Routledge in regard to his Silloth property. Four householders were fined for dirty ashpits. Several other nuisances were abated. Twelve visits were made to the docks and shipping, and no fault was found. No infectious cases occurred on any of the ships.

There were eight deaths in Holme St. Cuthberts—one from Phthisis. An inspection was made of Edderside, and notices served on proprietors to abate nuisances. An architect was consulted, and the Council agreed to carry out his plan. Subsequently the owners decided to adopt the scheme of the Board, but nothing has been done.

In Holme Abbey there were eight deaths, 1 from Phthisis. The nuisances at the Straits, frequently reported on, have been abated. Slaughter-houses satisfactory. In Holme East Waver there were twelve deaths, one being from Phthisis.

KESWICK (URBAN).

Medical Officer of Health

- - J. R. BURNETT.

Area in acres, 1,258.

Population, census 1891, 4,346; estimated to middle of 1897, 4,830.

Birth rate, 28.36.

Death rate, 12.83.

Zymotic rate,

This report only deals with the period from May 19th to December 31st, 1897. During this period there were 84 births and 38 deaths. There were 6 deaths under one year. There was 1 death from scarlet fever, and 2 from consumption, and 1 from general tuberculosis. There were 65 cases of scarlet fever notified, October supplying a larger number than any other month. The type was particularly mild, and the chief modes of infection are described. There were 42 cases sent to the Isolation Hospital. The want of a steam disinfecter is pointed out, and its advantages described. It was a recommendation of the late Medical Officer in 1894 to procure one, and its utility in neighbouring towns is described. There was one case of diphtheria. In two suspected cases specimens were sent for examination to British Institute for Preventive Medicine. Ringworm was common among school children. Repeated inspections were made, and on the whole the district was found to be clean and in a good sanitary condition. There are several large middens in the neighbourhood of Back Lane, which are injurious to health and should be abolished. Many of the ashpits are structurally bad, and sanitary fittings of private houses are often imperfect. The Council decided to grant sanitary certificates to houses which fulfilled certain conditions, but hitherto no certificate has been granted. All downspouts are to be disconnected from the sewers, and the sewers are to be ventilated by a shaft at the head of the system. The sewage farm is to be improved. The water supply, through careful management, has never failed, but an additional supply is required. The quality is good, and the chances of contamination remote. The extension of Back Lane to Bank Street will soon be accomplished. The adoption of "The Public Health Amendment Act of 1890" confers increased powers on the Authority, and "The Infectious Diseases Prevention Act of 1890" is recommended for adoption. A report of the Whinlatter Hospital is appended.

MARYPORT (URBAN).

Medical Officer of Health - - - - J. LITTLE.

Area in acres, 1,528.

Population, census 1891, 12,520; estimated to middle of 1897, 12,520.

Birth rate, 29.55.

Death rate, 13.01.

Zymotic rate, 2.79.

Infantile mortality, 113.5.

Death rate from phthisis 1.11, and from respiratory diseases 1.99.

There were 370 births and 163 deaths. The death rate is the lowest of which there is any record. There was 1 death from diphtheria, 1 from membranous croup, 1 from puerperal fever, 14 from measles, 7 from whooping cough, 11 from diarrhœa, 14 from phthisis, 25 from respiratory diseases, 11 from heart diseases, and 73 from all other diseases. The diarrhœa death rate is much above the average for the district, and is due mainly to faulty feeding. Under the Notification Act, 33 cases of infectious disease were reported, as follows:—Scarlet fever 14, diphtheria 4, membranous croup 1, enteric fever 6, puerperal fever 4, and erysipelas 4. Of the 6 cases of enteric fever 5 were imported from shipboard, having contracted the disease abroad. All the cases recovered. Three were treated in hospital.

The annual inspection of the water supply was made on July 7. The reservoirs and pumping machinery were satisfactory. No steps have been taken to deflect the surface water from the Goat and Papcastle Brows from the mill race. This should be done. The catchpits at the Thornthwaite Mines seemed fairly efficient. The sewerage works at Portinscale were found in the same objectionable state as heretofore. Several properties were inspected, and condemned for reasons stated by the sanitary inspector. These were—house, 105 King Street; tenement, 92c Nelson Street; tenement, 92d Nelson Street; dwelling-houses, 1 and 2 Younghusband's Yard, Nelson Street. On June 10, 63 houses at Netherton were found without water-closet accommodation, and a special report was presented.

A case was reported from Liverpool, in which a ship had been in Maryport from 13th to 15th May with a case of smallpox on board. The owners were severely cautioned for not giving proper instructions to their foreign captains.

In November and December several infant schools were closed, owing to outbreak of measles.

Tables A and B are appended.

MILLOM (URBAN).

Medical Officer of Health - - - P. BUTLER STONEY.

Area in acres, 1,311.

Population, census 1891, 8,857; estimated to middle of 1897, 9,910.

Birth rate, 35.93.

Death rate, 14.12.

Zymotic rate,

There were 356 births and 141 deaths. There were 45 deaths under one year. There were 14 deaths caused by zymotic disease and 18 by phthisis. There were 121 notifications of infectious disease received, viz., scarlet fever 87, enteric fever 21, erysipelas 9, croup 2, and diphtheria 2. The scarlet fever cases were in continuation of the epidemic of the two previous years. Without an isolation hospital it is impossible to stamp out the disease. Notices of each case were sent to the School Board, Free Library, &c., and disinfectants and the steam disinfector used where possible. There were 2 deaths from enteric fever. No cause can be assigned for the 21 cases and there is no evidence of a tainted milk supply. There are only about 65 open middens. The water is absolutely pure and every attention is paid to sewerage. There were 2 deaths from diarrhœa, 2 from diphtheria, 2 from croup, 1 from erysipelas, and 5 from whooping cough.

Tripe boiling is the only offensive trade, but no complaints received. Sewerage is reported very satisfactory. Several repairs carried out. There were 18,947 middens emptied during the year, showing an increase of 7,847. There were 101 middens converted into dry ashpits. A house to house visitation has been made to each of the 1,786 houses in the district, and a special visit where nuisances were reported. There are 5 common lodging houses and 12 slaughter houses, which were also inspected.

Tables A and B are appended.

PENRITH (URBAN).

Medical Officer of Health - D. G. PEARCE THOMSON.

Area in acres, 7,587.

Population, census 1891, 8,981; estimated to middle of 1897, 9,300.

Birth rate, 25.59.

Death rate, 15.37.

Zymotic rate, 2.25.

Infantile mortality,

Death rate from phthisis is 0.9, and from respiratory diseases, 1.5.

There were 238 births and 154 deaths. There were 32 deaths under one year of age. There were 17 deaths due to measles and its complications. There were 9 deaths from phthisis, and 10 from cancer. There were 21 cases of scarlet fever, and 9 were removed to hospital. The last case reported was in August. Owing to serious outbreak of measles the schools were closed for four weeks with the very best result. There were 3 cases of erysipelas, 1 in the Workhouse.

The question of the water supply has occupied the attention of the Council, and plans are preparing for improving the present supply.

The Infectious Hospital has been used both for cases of measles and scarlet fever. The Reck's disinfectors have been of the greatest service for disinfecting clothing and bedding.

The sewerage has been under consideration. A complete system of new sewers for the whole town with improvement in the disposal of sewage matter at the outfall has been provided, and the engineers are prepared to carry out the work.

There is a marked improvement in the general sanitary condition of the town. All defective drains, when discovered, are reconstructed and properly trapped and ventilated. A number of houses unfit for habitation have been compulsorily closed. Numerous nuisances are reported. The Bakehouses, Cowsheds, Dairy, and Lodging-houses are all in a satisfactory condition. The Workshops have been registered, and are visited from time to time. Several statistical tables are appended.

WHITEHAVEN (URBAN).

Medical Officer of Health - - - - J. B. FISHER.

Area in acres,

Population, census 1891, 19,236; estimated to middle of 1897, 20,000.

Birth rate, 27.95.

Death rate, 15.70.

Zymotic rate, 1.2.

There were 314 deaths and the death rate is 4.99 below the average of the preceding nine years. There were 67 deaths of infants under one year of age, of children under 5 years there were 113 deaths, and of persons over 65 there were 50 deaths. There were 24 deaths from zymotic diseases, the zymotic rate being 1.6 below the average of the previous 9 years. The number of births was 559, and the average rate for the previous nine years being 32.36. There were 181 cases of infectious disease notified, there being 146 of scarlet fever, 7 enteric fever, 1 continued fever, 2 puerperal fever, 3 smallpox, 4 diphtheria, 1 membranous croup, and 17 erysipelas. Of the scarlet fever cases 34 were removed to Hospital, and 2 of them died. Of the cases treated at their own homes 7 proved fatal. The disease has been universal through the borough during the year, but not so prevalent as in the previous year. The cases were most numerous during the last four months of the year. The longest period in Hospital was 11 weeks 4 days. The Inspector attends to removal of infected clothing and other articles to the steam disinfectant at Bransty, and attends also to disinfection of rooms after patients' removal to Hospital. The source of infection in the smallpox cases was problematical. All the cases were removed to Hospital, and all persons in contact with the patients were re-vaccinated. Three of the enteric fever patients were removed to the Hospital and 2 died.

The alterations in the Hospital recommended in the two previous reports have been carried out according to plans approved by the Local Government Board.

Regular and frequent inspections have been made, and many improvements in ventilation of houses, trapping of drains, refuse removal, the cleaning of dirty houses, &c., effected on verbal notice. Some of the slaughter houses are so situated and constructed as to be entirely unfitted for the purpose. It is not possible to have efficient inspection of them, however vigilant and experienced a meat inspector may be, and a Public Abattoir is recommended. Two seizures of meat unfit for food were made during the year. In one case the meat was putrid and in the other the animal was in an advanced stage of tuberculosis. No prosecutions were instituted, there being no evidence of intention to expose the meat for sale.

The sanitary condition of the Borough at the end of the year is fairly satisfactory. The seven cases of enteric fever were not the result of any general insanitary condition. A description of the water supply is given. The water is from Ennerdale Lake, described by the Analysts, as "one of the purest sources in the kingdom." The lake is not liable to contamination and one million gallons a day may be taken. The lake is eight miles from the town and at an elevation of 369 feet O.D. The more elevated parts of the borough are supplied from "the high level reservoir," which is covered and has an elevation of 500 O.D. The water destined to supply the lower parts of the town works the hydraulic pumps which force the water to the "high level reservoir." The "low level reservoir," at an elevation of 178 feet O.D., is uncovered, and the water from this reservoir is filtered through sand and gravel. Arrangements have been made for periodical analysis by the County Analyst of samples taken from taps in different parts of the borough.

Several statistical tables are appended.

WIGTON (URBAN).

Medical Officer of Health - - - T. A. PALM.

Area in acres, 777.

Population, census 1891, 3,965; estimated to middle of 1897, 3,965.

Birth rate, 25.22.

Death rate, 14.60.

Zymotic rate, nil.

Infantile mortality, 70.

Death rate from phthisis 1.26, and from respiratory diseases 1.76.

During the year there were 100 births and 65 deaths, including 12 in the workhouse; of the latter, 8 were of inmates who came from parts of the Union outside the Urban District, one death of a person belonging to the district occurred outside the boundaries, and the corrected number stands at 58 deaths. The average death rate for the last 5 years is 18.40. The infantile mortality is very low, the average of the four preceding years being 175.24. No reason is assigned for the very satisfactory improvement. Scarlet fever appeared in August, and scattered cases continued till towards end of year. By the courtesy of the medical practitioners of the district, a list of cases of infectious sickness is given. There were 17 cases of scarlet fever, 3 of diphtheria, 3 of membranous croup, 2 of enteric fever, 1 of puerperal fever, 4 of erysipelas, and 6 of chicken pox. Compulsory notification is not in force, and so far as the prevention of infectious disease is concerned, the medical officer is a useless functionary, as he is not officially acquainted with the outbreak of the infectious diseases. The dangers of concealed cases of scarlet fever is illustrated. The disease was discovered in a house where a sale of furniture was about to take place, and the sale was stopped. In another case the sale took place, but there were strong reasons for believing that scarlet fever existed in the house before the sale. The circumstances under which the cases of diphtheria and typhoid fever occurred are entirely unknown to the medical officer. Attention is again called to the absence of any provision for isolating infectious cases. Some improvement has been made in the water supply by attention to the pipes between the springs and the reservoir. In consequence of representations made, earth closets are to be introduced into Brookfield school, and the faulty arrangements for slop water are to be altered. Several minor nuisances have been abated. Tables A and B are appended.

WORKINGTON (URBAN).

Medical Officer of Health J. HIGHER.

Area in acres,

Population, census 1891, 23,490; estimated to middle of 1897, 23,490.

Birth rate, 33.9.

Death rate, 14.46.

Zymotic rate, .518.

Infant mortality, 124.6 per 1,000 registered births.

There were 802 births and 338 deaths during the year. The death rate is the lowest for 15 years. One hundred deaths occurred under one year, and included 17 deaths from gastro-enteritis, 17 from convulsions, 28 from bronchitis, 13 from pneumonia, 6 from meningitis. There were 2 deaths from whooping cough, 2 from diphtheria, 2 from scarlet fever, 1 from diarrhoea, 1 from enteric fever, and 2 from measles. Under the Notification Act, there were reported 44 cases of scarlet fever, 11 enteric fever, 5 diphtheria, 2 membranous croup, and 26 erysipelas, in all, 88 notifications, as against 458 in 1896, and 713 in 1895. The falling off is mainly in regard to scarlet fever, and the district is now practically free from the disease.

An enquiry was held with regard to borrowing £1,700 for certain alterations and additions to Ellerbeck Hospital. It was decided to build a new administration block, to re-arrange the wards to meet modern requirements, and to add wash-houses, drying-room, mortuary and disinfecting chamber. Accommodation is provided for 20 beds. During the year 26 patients were admitted to Hospital, 23 being scarlet fever cases and 3 cases of enteric fever. The Thresh Disinfecter has been found of the greatest service.

An attempt has been made to deal with the housing of the working classes, and a special report was presented. A large block of insanitary property in King Street was scheduled. The matter appears to have been considered, but nothing has been done.

Attention is again called to the danger which may spring from the present intermittent system of water supply. A constant supply is necessary, and better provision for storage.

A summary of the work of the Inspector of Nuisances is added.

ALSTON NO. I, OR LOW DISTRICT (RURAL).

Medical Officer of Health - - - S. CARSON.

Area in acres, 12,000.

Population, census 1831, 1,709; estimated to middle of 1897, 1,709.

Birth rate, 16.30.

Death rate, 19.30.

Zymotic rate, 2.34.

Infantile mortality, 107.

Death rate from phthisis, 0.58, and from respiratory diseases, 1.17.

There were 28 births and 33 deaths. The more important causes of death were:—Measles, 3; diarrhœa, 1; influenza, 3; heart disease, 5; diseases of respiratory organs (including phthisis), 2; diseases of the nervous system, 3. There were 3 deaths under one year of age, and 11 at 65 and upwards. Influenza prevailed during the first six weeks of the year, and the High, National, and Leadgate Schools were closed in consequence for a fortnight. Towards the close of the year influenza again prevailed. Three cases of scarlet fever were notified in January, and the High School was closed for a fortnight. In June a case occurred in the Workhouse. It did not spread. After a remarkable immunity for twelve years measles became epidemic during the summer. The school holidays were extended in consequence. An epidemic of whooping cough followed, but it was mild. There were two cases of enteric fever, one being imported. Diarrhœa caused one death. There were 4 notifications of scarlet fever and 2 of enteric fever, and action was taken in each case to limit the outbreak.

Steps have been taken to complete the water main from the tank at Springfield to the Townfoot. The supply at the north end of the Townfoot is defective. There were 49 notices served to provide closets and ashpits, and three months allowed to comply with the order. In 10 cases the order has been complied with. In the case of those who have no yard or ground on which to erect ashpits a difficulty has arisen. It is suggested that owners should combine in groups to erect properly constructed covered-in ashpits in certain parts of the town. Large filthy accumulations now exist at Clitheroe, at Burn Bank, and at Nentside, which certainly detract from the value of Alston as a health resort.

Tables A and B are appended.

ALSTON No. II. (RURAL).

Medical Officer of Health - - - - E. W. SHORT.

Area in acres, 24,000.

Population, census 1891, 1,675; estimated to middle of 1897, 1,875.

Birth rate, 23.46.

Death rate, 16.5.

Zymotic rate, 2.13.

Infantile mortality, 227.2.

Death rate from phthisis, 1.6.

There were 44 births and 31 deaths. There were 4 deaths from scarlet fever. The death rate at Nenthead was 17.1, and at Garrigill 15.4. A large increase in the population, estimated at 200, has taken place, owing to the remarkable improvement in the mining industry. There were 31 cases of scarlet fever in Nenthead and 1 in Garrigill. The large infantile mortality was due to a number of weak and puny infants, some of them prematurely born. There were 4 deaths from scarlet fever, and 3 from phthisis. An epidemic of influenza occurred early in the year. In many cases eruptions resembling scarlet fever and measles were visible, and diagnosis was difficult. Cases occurred throughout the year. An epidemic of measles occurred early in the year at Garrigill, and the school was closed. The infection was imported from Newcastle. No deaths occurred.

The smelting mill at Nenthead was closed early in the year, with results most beneficial to the health of the District. A house to-house inspection of the District has been made. An abatement of nuisances is noticed, and an improvement in defective sanitary conditions; several new privies have been erected, but more accommodation of this kind is urgently needed.

The water supply requires attention. After rain the water in most of the wells is unfit to drink. New pipes are required. New pipes have been put in between Nenthead well and High House. Complaints were made as to overcrowding, and an investigation carried out. In a few instances warning was given that no more lodgers were to be taken. The "Barracks" were inspected; it used to be the storeroom of the smelting mill, and now provides accommodation for the "walleTERS." It contains accommodation for 42 persons, but there were only 36 occupants.

Tables A and B are appended.

BOOTLE (RURAL).

Medical Officer of Health - - - - E. EDEN CASS.

Area in acres,

Population, census 1891, 5,982; estimated to middle of 1897, 5,976.

Birth rate, 23.09.

Death rate, 15.7.

Zymotic rate, 0.5.

Infantile mortality, 101.4.

There were 138 births and 94 deaths. There 14 deaths under one year. There were 2 deaths from phthisis, 1 from scarlet fever, 1 from enteric fever, 1 from diarrhœa, 1 from whooping cough, and 7 from erysipelas. There were several mild cases of scarlet fever in the Rural District of Millom. A few sporadic cases of enteric fever occurred, and an epidemic of whooping cough and mumps necessitated the closing of Muncaster and Ravenglass day schools. The Infectious Diseases Notification Act came into force on December 11, 1897. It is likely to be of great use. Scarlet fever broke out in a large family at Hall Thwaites; the sick members were removed to the infectious ward at Bootle, the house was disinfected, and further spread of the disease checked.

Insanitary conditions mentioned in last year's report are now removed. Insanitary conditions at Bootle and Drigg stations still exist, although Council requested their removal. The Railway Company agreed to carry out suggestions made, but nothing has been done. An attempt has been made to induce property owners to obtain a better water supply for Drigg. Some work has been done, but further improvements are indicated. A more efficient water supply is required for the Green and neighbouring country, as far as Thwaite's School, including Hall Thwaites, Strands, and Green Road Station.

Several statistical tables are appended.

BRAMPTON (RURAL).

Medical Officer of Health - - - - W. SYMINGTON.

Area in acres, 97,705.

Population, census 1891, 9,754; estimated to middle of 1897, 9,754.

Birth rate, 23.16.

Death rate, 13.43.

Zymotic rate, *nil*.

There were 131 deaths and 226 births. There were 20 deaths under one year of age. There were 9 deaths from phthisis, 2 from tubercular disease, and 12 from cancer. There were 15 deaths due to acute disease of lungs. Several outbreaks of scarlet fever occurred, all of the mildest type. Cases occurred at Brampton, Irthington, and Farlam. All were visited. Two cases of enteric fever occurred, one at Hallbankgate, and the other at Faugh. The latter was imported from Alston. No cause discovered for first. Several mild cases of erysipelas reported. Influenza prevailed throughout the year. In Brampton Sub-District the death rate was 11.65, and in Brampton Parish 11.11, in Farlam 11.98, in Midgeholm 8.81, in Hayton 15.37, in Walton 15.88, in Upper Denton 11.97, and in Nether Denton 19.77. There were 9 deaths in the workhouse.

The smaller schemes for the supply of Irthington, Hayton, and Castle Carrock have been abandoned, and the larger scheme, by gravitation, definitely decided upon. It is awaiting the sanction of the Local Government Board. Sanction has been granted for extension of the Farlam water supply to the Bog Cottages and Milton, and the work is in progress. The joint scheme with Haltwhistle for drainage of portion of Upper Denton is in progress and the difficulty of securing an outlet may be arranged. The extension of Brampton sewerage to Common House is proceeding.

A number of general and special inspections were made.

Tables A and B are appended.

CARLISLE (RURAL).

Medical Officer of Health - - J. A. MACDONALD.

Area in acres, 67,098.

Population, census 1891, 16,009; estimated to middle of 1897, 16,009; inhabited houses, census 1891, 3,251.

Birth rate, 26.2.

Death rate, 18.1.

Zymotic rate, 0.8.

Infantile mortality, 107.1.

During the year there were 420 births and 291 deaths. Of the latter 62 occurred in public institutions, viz., St. Joseph's Home and Garlands Asylum. The notifications of infectious disease were as follows, viz.:—Measles, 175; scarlet fever, 114; erysipelas, 18; diphtheria, 5; enteric fever, 3; membranous croup, 2; puerperal fever, 2; and croup, 1. Thirteen deaths were due to these diseases. Measles occurred as a widespread epidemic in Dalston. The type of the disease was mild, and there was only one death. There were 35 cases removed to hospital. Scarlet fever broke out in Stanwix in July, and lasted till middle of November; 76 cases were reported, 46 households were affected, and 2 deaths occurred. The infection was traced to the principal school, and the school was closed for a few days for disinfection. The general sanitary condition of the school and its offices was satisfactory. There is difficulty in obtaining perfect purification of infected articles as no steam disinfectant is available. Twenty-one of the patients were removed to hospital. Cases of the fever occurred at Brisco, Dalston, Cargo, and Great Corby. They were at once removed to hospital, and there was no further spread.

Water supply.—Cargo, with a population of 300, has long needed a water supply. An official enquiry was held, and a Provisional Order obtained to put in force the powers of the Land Clauses Act in order to obtain a suitable supply from Cargo Hill. The matter has been referred to arbitration. The Carlisle water supply has been extended to Upperby, but the St. Cuthbert Without Parochial Committee does not consider the supply sufficient, and very few villagers have taken advantage of it. The Carlisle Corporation hold

the prescriptive right of water supply over the whole of the Carlisle Rural District, except Rockcliffe and Kingmoor. It is proposed to supply the village of Cocklakes by extension of the Cowran water from Cumwhinton. There is a water scheme for Cotehill under consideration. Some minor extensions of the Cowran water are reported, and it is proposed to extend it forthwith to Wetheral Shields. Advice has been given as to many insanitary conditions seen with the inspector. The pollution of Powmaughan Beck at Scotby by refuse from tannery was examined. It was said to have caused death of cattle by poisoning. Samples were taken above and below the tannery, from a tan-pit, and from a settling bank. A searching analysis in Edinburgh showed that the water was deteriorated, but would not poison cattle. At Irving's place, Cummersdale, an open ditch, 300 yards long, is being filled in. An old property in this village was condemned as unfit for habitation. A footpath from Irving's place, Cummersdale, has been made, and a filthy pond by the roadside and marshy field has been converted into a recreation ground through local liberality. A special report on Stanwix will be presented at an early date.

Several statistical tables are appended.

COCKERMOUTH (RURAL).

Medical Officer of Health - - - - J. ROBERTSON.

Area in acres, 162,145.

Population, census 1891, 29,427; estimated to middle of 1897, 26,395.

Birth rate, 26.06.

Death rate, 12.16.

Zymotic rate, 1.09.

Infantile mortality, 107.5.

Death rate from phthisis, 0.53, and from respiratory diseases, 1.32.

There were 688 births and 321 deaths. In the first quarter of the year the death rate rose to 16.0, owing to prevalence of whooping cough; in the second quarter it was 12.4; third quarter, 9.6; and fourth quarter, 10.4. In the Keswick Rural District it was 11.6. Several isolated outbreaks of scarlet fever occurred in the district during the year. In the Cockermouth Rural District the death rate was 11.7. There was an outbreak of whooping-cough at Wyndham Row, 2 fatal cases of membranous croup at Great Broughton, and a case of diphtheria at Waterend, Loweswater. An increase of cancer is reported. In the Workington Rural District the death rate was 13.2. Whooping-cough was prevalent at Seaton. Camerton schools were closed for a time. A few cases of scarlet fever occurred. Consumption was more fatal. In the Maryport Rural District the death rate was 11.8. The low rates are mainly due to reduced mortality from acute respiratory diseases. There were 2 deaths from scarlet fever, 1 from diphtheria, 4 from membranous croup, 16 from whooping-cough, 1 from enteric fever, and 5 from diarrhœa. One death from diarrhœa occurred at Flimby Brow, where overcrowding existed, nine persons occupying 2 small bedrooms, giving 227 cubic feet of air space per head. Another infant died at Sandlane, where 2 bedrooms served for 8 persons, giving 266 cubic feet for each individual. There were notified 59 cases of scarlet fever, 5 of membranous croup, 2 of diphtheria, 2 of enteric fever, and 7 of erysipelas. The first outbreak of scarlet fever during the year occurred at Braithwaite, opposite the National school. Owing to gross carelessness in isolation, 5 other cases occurred. Limited outbreaks occurred during the year, but there was marked recrudescence in March, August, September, and October. The disease appeared in two families, one at Portinscale and the other at Fothergill, Flimby, where both were engaged in business as provision dealers. No adequate isolation was observed. A case was reported in a lodging house, at Portinscale, in August, when the place was full of visitors. The patient was transferred to Braithwaite and isolated. In Seaton a purveyor of milk had to

discontinue his business owing to outbreak of scarlet fever in his family. The inadequate provision for isolation is felt in almost every village, and an isolation hospital is urgently needed. Two cases were reported for not notifying scarlet fever, and the parents censured. In one house, where a fatal case of membranous croup was reported, a bedroom was found extremely damp from defects near the roof. A polluted domestic water supply at Waterend, Loweswater, was discovered, where a fatal case of diphtheritic croup occurred, and a pure supply by gravitation has been obtained. A privy and ashpit near the kitchen caused a fatal case of enteric fever at Great Broughton; the nuisance is now abated. Measles occurred at Seaton, Town Head, Dearham, and Wyndham Row. Whooping-cough was very prevalent in early part of year, and several schools were closed.

Complaint was made as to insanitary cowshed, and reported on. At Braithwaite, a house placed on the island is thoroughly insanitary and unfit for habitation. A very unhealthy habitation was found at Seaton, where 2 deaths from whooping-cough occurred; this was repaired. A long-standing nuisance exists at Quality Corner; a one-roomed cottage situated here was condemned. Sanitary defects were reported at Millstone Moor farmhouse, and the Grange, Loweswater, but are now rectified. Structural defects were repaired in 43 houses, overcrowding abated in 10, ventilation improved in 4, water supply improved in 40, and 70 were sewered. Sewerage has been completed at Crosby, Allerby, and Little Clifton; at Oughterside it is in progress, and at Threapland and Bewaldeth it is *in statu quo*. The sewerage at Dearham is in abeyance. Several nuisances dangerous to health exist, which cannot be abated until the sewerage is carried out. The drainage of Grange and Rosthwaite was under consideration. Temporary inconvenience from inadequate supply of water was experienced at Brigham. Attention is strongly called to Keswick sewage irrigation field polluting River Derwent above intake of the Maryport waterworks. The water supply of Strawberry How is also polluted. There are 55 purveyors of milk registered. There were 2,531 nuisances abated by statutory notice, 920 by verbal notice, and 42 by peremptory notice.

Several statistical tables are added.

LONGTOWN (RURAL).

Medical Officer of Health - - - S. F. Mc.LACHLAN.

Area in acres, 94,173.

Population, census 1891, 7,181; estimated to middle of 1897, 7,181.

Birth rate, 22.42.

Death rate, 14.34.

Zymotic rate, 0.55.

Infantile mortality, 99.38.

Death rate from phthisis 1.11, and from respiratory diseases 1.95.

There were 161 births and 103 deaths. In the High District, the birth rate was 18.36, and the death rate 12.24. In the Low District, including the workhouse, the death rate was 15.22, and the birth rate 24.12. In Longtown, the death rate was 14.32. There were 3 deaths from diphtheria, and 1 from whooping cough. The lowest death rate in 1897 was 7.31, in Nichol Forest; and the highest in Scaleby, 23.19. There were 2 deaths of persons not belonging to the district, and this reduces the death rate to 14.06. Diseases of the nervous system caused 18 deaths, respiratory diseases 14, and heart disease 17. There were 2 deaths from cancer.

There were 27 notifications of scarlet fever, all in the Low District, and 15 in Longtown. In no case was it necessary to close the schools. The cases were mild, and probably spread from unrecognized cases. There was one case of erysipelas. There were 13 cases of diphtheria, 9 in High District and 4 in the Low District. The first case occurred at Yuill's Croft on August 3rd, in a girl attending Easton School; on the 6th, the girl's father and mother contracted the disease. On the 9th, a boy at Parkhouse, attending the same school, began. Then 7 cases occurred at Owlethirst. Easton School was visited, and sufficient cause for the outbreak found. There was one case of enteric fever in Longtown, and another at Standingstone Rigg. Details of sanitary work are given. New privies have been erected, others put in order, ventilation of houses improved, drainage improved, paving and channelling carried out, new spouts put up, and other sanitary defects remedied, improvements carried out at Blackbank, Rhodds, Blackford,

and Scaleby Schools; sanitary defects at Easton School remedied, but moveable pails not yet provided for privies. The school was closed and disinfected. Improvements are being carried out at Owlethirst. At Kingfield Lodge, where a case of diphtheria occurred, a choked water-closet was found. The closet was closed and an earth closet erected. Riggfoot was reported, but nothing has been done. The condition of Ford Inn is described. It is not fit for habitation. Nothing has been done. In the Longtown diphtheria case there was no proper drainage for surface slops, and the privies were unsatisfactory. Defects at Standingstone Rigg are described. In both these cases the time allowed to do the work has not expired. Various defects at High and Low Ullermire were reported. The sanitary condition of Bushfield was reported on in 1896. Nothing has yet been done.

Good water has now been supplied to the Railway Cottages at Mossband Hall. The pump at Lynebank now works well. The well at Birney's Hill has been cleaned and protected. A good water supply has been got for Whiteclose. Steps are being taken to improve the supply at Moorhead. The well at Mosshouse has been cleaned and bricked round, and the well at Howrigg cleaned. A fresh supply has been obtained for Troughhead. The supply at the Moat Farm has been protected. The supply at Ford Inn is being protected. In many other cases the supply has been improved.

Tables A and B are appended.

PENRITH (RURAL).

Medical Officer of Health - - - F. HASWELL.

Area in acres, 161,293.

Population, census 1891, 13,595; estimated to middle of 1897, 13,313.

Birth rate, 25.23.

Death rate, 16.90.

Zymotic rate, 0.67.

Infantile mortality, 77.387.

Death rate from phthisis, 1.30.

There were 336 births and 225 deaths. There were 34 deaths due to phthisis and cancer, 16 of the former and 18 of the latter. The death rate of these two diseases, as compared with England and Wales, is as follows:—

England & Wales.			Penrith Rural District.		
			1895.	1896.	1897.
Phthisis	..	1.64	0.58	0.89	1.30
Cancer..	..	0.63	1.08	1.34	1.35

There were 63 notifications and 5 deaths—2 from enteric fever, and one each from puerperal fever, diphtheria, and erysipelas. There were 46 cases of scarlet fever reported, and one case was removed to hospital. The general type of the disease was mild. At Bennethead, Watermillock, 12 cases occurred in two houses. At Dowthwaitehead, Matterdale, a similar outbreak produced 8 cases. Cases keep occurring in the Raughton Head district. A case of diphtheria occurred at Brockley Moor, Plumpton. No cause could be ascertained. Cases of enteric fever occurred at Dacre (1), Renwick (1), Glassonby (1), Langwathby (2), Catterlen (1), Edenhall (1), Watermillock (1). Investigation was made in each case, and sanitary measures taken where needed. Epidemics of measles occurred at Stainton and Melmerby requiring the schools to be closed.

A large number of inspections have been made, and a house-to-house inspection made of Blencarn, Kirkland, Hunsonby, Winskill, and Croglin. Various insanitary conditions were reported and remedied. The following villages have a public supply of water from springs, viz.:—Threlkeld, Skirwith, Kirkoswald, Lazonby, Renwick, Langwathby, Ainstable, Great Salkeld, Kirkland, Blencarn, Gamblesby, Glassonby, Hunsonby, Winskill, and Ousby. There are private supplies to the villages of Edenhall, Croglin, and Greystoke.

During the year works of water supply have been carried out at Melmerby. At Newbiggin the two higher public wells have been protected from pollution. The question of a water supply to Hesket has occupied attention, and a special report is given of the water supplies of the villages in the west division of the district is given in the form of an appendix. Analyses of 10 samples of water made, and reported satisfactory; one at Kelbarrow, unsatisfactory. At Culgaith the public well has improved, and steps are being taken to prevent contamination.

Scavenging is done privately, and system works fairly well. More attention should be given to cleansing of privies. Schools require more attention. Sewers have been laid in several villages, as follows:—Armathwaite, Blencarn (part), Lazonby, Kirkoswald, Renwick, Great Salkeld (part), Little Salkeld (part), Greystoke, Culgaith, and Langwathby. There is a private sewer at Glassonby. During the year a sewerage system has been put in at Threlkeld, and a scheme is under consideration for Croglin.

The steam disinfecter at the hospital is used when required. For house disinfection an “Equifex” sprayer is used, and is very satisfactory. Bye-laws have been adopted, and are awaiting the approval of the Local Government Board.

There is one common lodging-house, and it is not satisfactory. The adoption of the bye-laws should lead to its being more effectually dealt with. The Infectious Diseases Prevention Act of 1890 has been adopted during the year. The reports of the Sanitary Inspector and various tables are appended.

WHITEHAVEN (RURAL).

Medical Officer of Health - - - - J. B. FISHER.

Area in acres,

Population, census 1891, 15,071; estimated to middle of 1897, 15,500.

Birth rate, 27.35.

Death rate, 14.32.

Zymotic rate, 0.83.

Infantile mortality, 110.84.

There were 424 births and 222 deaths; 43 deaths occurred in the Workhouse and Galemire Hospital of persons not belonging to the district, thus reducing death rate to 11.77. The highest death rate occurred in the Harrington District, and was 13.81. In the Egremont Sub-district it was 11.56, and in St. Bees only 8.61. Of the deaths due to zymotic disease, 6 were due to whooping cough, 5 to scarlet fever (2 from another district), 1 to diarrhoea, and 1 to puerperal fever. Nine deaths were due to phthisis, and 32 to acute pulmonary diseases. There were 104 notifications of infectious disease, viz., 88 of scarlet fever, 1 of diphtheria, 2 of croup, 5 of enteric fever, 1 of puerperal fever, and 7 of erysipelas. Ten cases of scarlet fever were isolated in hospital, one by the magistrates' order. Three of the enteric fever cases occurred in one house at Winter Ghyll; the first was removed to hospital by the magistrates' order. There were 4 privies for 11 houses, and they were dirty and dilapidated, and the drains were very foul. The drains were cleaned, and notice served on owners to provide separate privy for each house. A representation was made by the Parish Council of St. John, Beckermest, that the parish was insufficiently supplied with water, and that the water supply of the village generally was defective. An inspection was made. There are 80 houses. Twelve houses in Parish of St. John have no supply, except the Church well, 15 have wells, and 5 have no wells, but obtain water from neighbouring houses belonging to same owners. Four of the wells give out in dry weather, 5 of the wells are liable to pollution, and others are not above suspicion. The waters are generally hard. In St. Bridget's Parish, 16 houses have no water supply of their own, and get it from the Church well or from their neighbours, 9 have wells of their own, whilst 5 other wells supply 2, 3, or 4 houses each.

Some of the wells dry out in summer. The supply in Haile is also defective. On Nov. 11, a list of houses having no supply, or a defective supply, was submitted to the Council, and notices were served on the owners to provide a supply in three months. The replies have been filed, and will be considered at the expiration of 3 months.

The scheme for sewerage works and sewage disposal at Distington has been advanced. The Local Government Board, after local enquiry, have expressed approval of plans, subject to provision of 2 more acres for the outfall than shown in plans. Sanction was obtained to borrow £280 for water supply of Howgate. Directions were given to provide pure water for Moresby Terrace, Parton, in place of polluted supply. A nuisance at Seascale, caused by sewage, has been partially abated, and the work of improvement is in progress.

The District has been regularly inspected, and a large number of insanitary conditions remedied.

Several statistical tables are added.

WIGTON (RURAL).

Medical Officer of Health

W. P. BRIGGS.

Area in acres, 108,918.

Population, census, 1891, 15,936.

Birth rate, 23.2.

Death rate, 13.8.

Zymotic rate, 0.3.

Infantile rate, 111.

There were 306 births and 182 deaths. The birth rate has been steadily decreasing during the last four years. In Caldbeck the death rate was 12.2; in Wigton 14.2; and in Aspatria 15.1. There were 3 deaths due to diphtheria, 2 to scarlet fever, 1 to puerperal fever, 15 to phthisis, 1 to rheumatic fever, 31 to acute pulmonary diseases, 24 to heart disease, 8 to injuries, and 97 to other causes. The greatest age was 97. Cancer is on the increase. The infantile mortality is highest in the Aspatria district. There were 2 deaths from scarlet fever, and 3 from diphtheria, the former in the Wigton sub-district, and the latter in Caldbeck. There were 65 notifications, viz., 30 of scarlet fever, 17 of diphtheria, 2 of puerperal fever, 3 of enteric fever, and 11 of erysipelas. The need of a steam disinfectory and infectious hospital is strongly urged. Attention is called to the probable advantages of the new Nursing Association. Many inspections have been made, and careful inspections were made of Allonby, Hayton, Langrigg, Caldbeck, Hesket-new-Market, Glasson, Little Bampton, Whitriggles, Fingland, and Greenspot. Many nuisances were reported and remedied. Drainage improvements have been effected or are in progress at Bromfield, Bowness, Glasson, Dundraw, Thursby, Caldbeck, Westnewton, and Langrigg. Drainage is required, and a system recommended, for Welton, Upton, Caldbeck, Whitriggles, Greenspot, Parton, and Blencog.

The water supply of the district is mainly from wells. Ireby, Torpenhow, Hesket-new-Market, and parts of Sebergham and Caldbeck have public supplies from springs. A scheme is under consideration for Upton and Caldbeck, and is much needed. Many villages possess doubtful wells. Analyses have been made of samples of water as follows:—Warwick Hall well, polluted; Sceugh farm, Hesket, polluted; Bromfield public well, satisfactory; Church Hill farm well, polluted; Port Carlisle, Steam Packet Hotel, satisfactory; well at Mr. Whitfield's, Glasson, polluted.

Scarlet fever was epidemic at Blennerhasset in the beginning of the year. Several cases occurred at Glasson, the infection being imported from Carlisle. Much good sanitary work has been effected

since the disease broke out. A case occurred at Dundraw, the infection also coming from Carlisle. In November 2 cases occurred at Allonby, source not traced. Diphtheria occurred at Newland House, Sebergham, Ireby, and Hesket new-Market. Defects of drainage, dampness of subsoil, and foul ashpits were observed at some of the houses. Two cases of enteric fever occurred at Blennerhasset, attributed to drinking water from the River Ellen, which receives much sewage. A third case occurred at Bowness-on-Solway, and there was an insanitary ashpit on the premises.

The drains, lodging-houses, and slaughter houses were inspected. A second lodging-house was licensed at Glasson.

Representatives of Aspatria Urban, Holme Cultram Urban, and Wigton Urban and Rural District Councils met in October, with respect to providing infectious hospital and disinfecting chamber, and decided to take no action.

WORKINGTON (PORT).

Medical Officer of Health - J. C. HODGSON.

During the year no infectious cases entered the ports of Workington and Harrington.

There were 35 foreign and 999 coasting vessels arrived at Workington, and 649 coasting vessels at Harrington. All foreign vessels and a large number of coasters were inspected; all very satisfactory.

The hospital at Merchants' Quay has been thoroughly renovated, and placed in a condition for the immediate reception of patients. This is very necessary in view of smallpox at Middlesborough and Bilbao, and other ports in Spain with which Workington has a close connection in the iron ore trade.

